

No. 632,278

Patented Sept. 5, 1899.

R. H. PLASS.  
SELF PROPELLING VEHICLE.

(Application filed Jan. 9, 1899.)

(No Model.)

3 Sheets—Sheet 1.

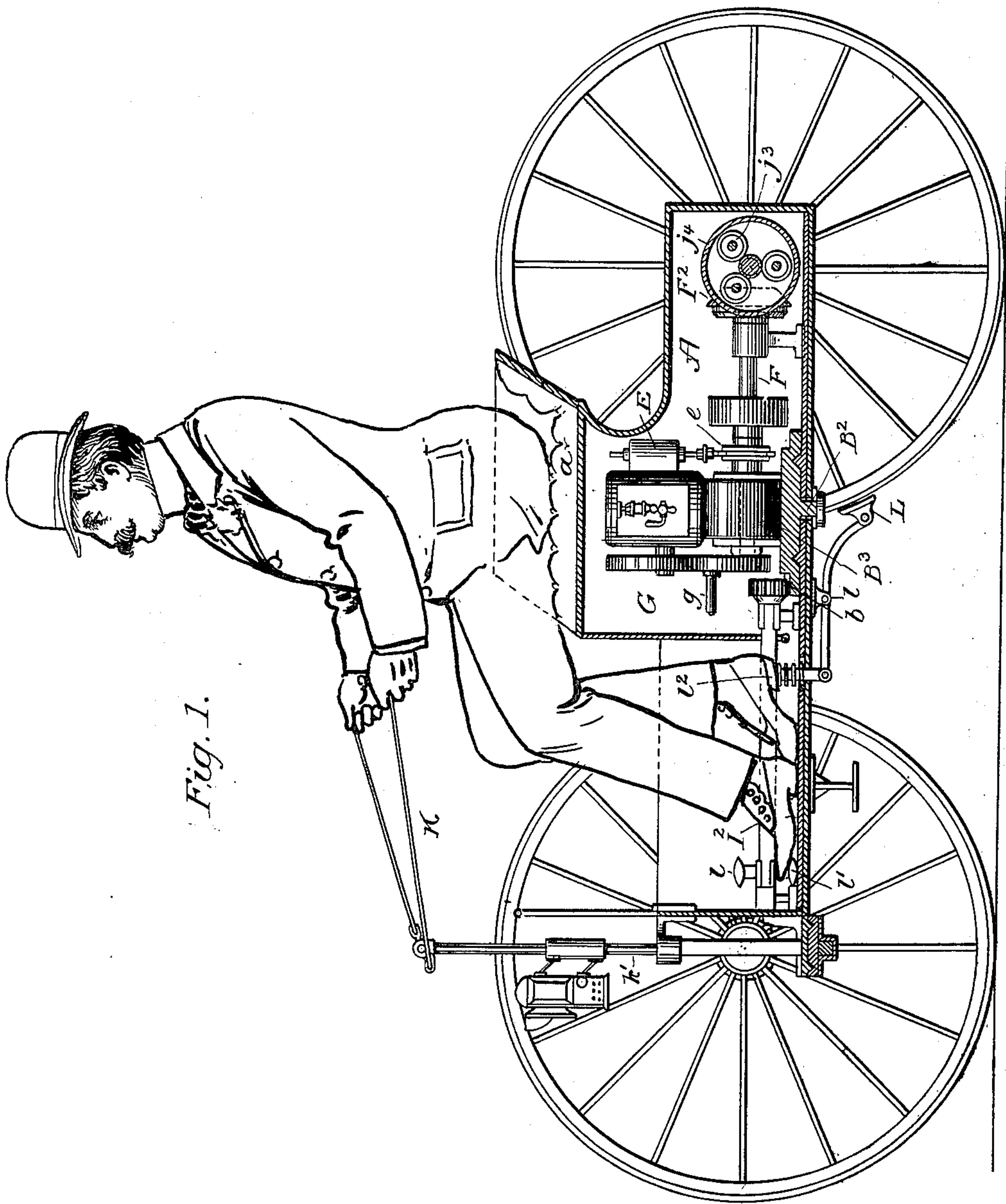


Fig. 1.

Witnesses:  
A. W. E. Kennedy  
Arthur Ashley

Inventor:  
R. H. Plass  
By H. R. Kennedy  
Atty.

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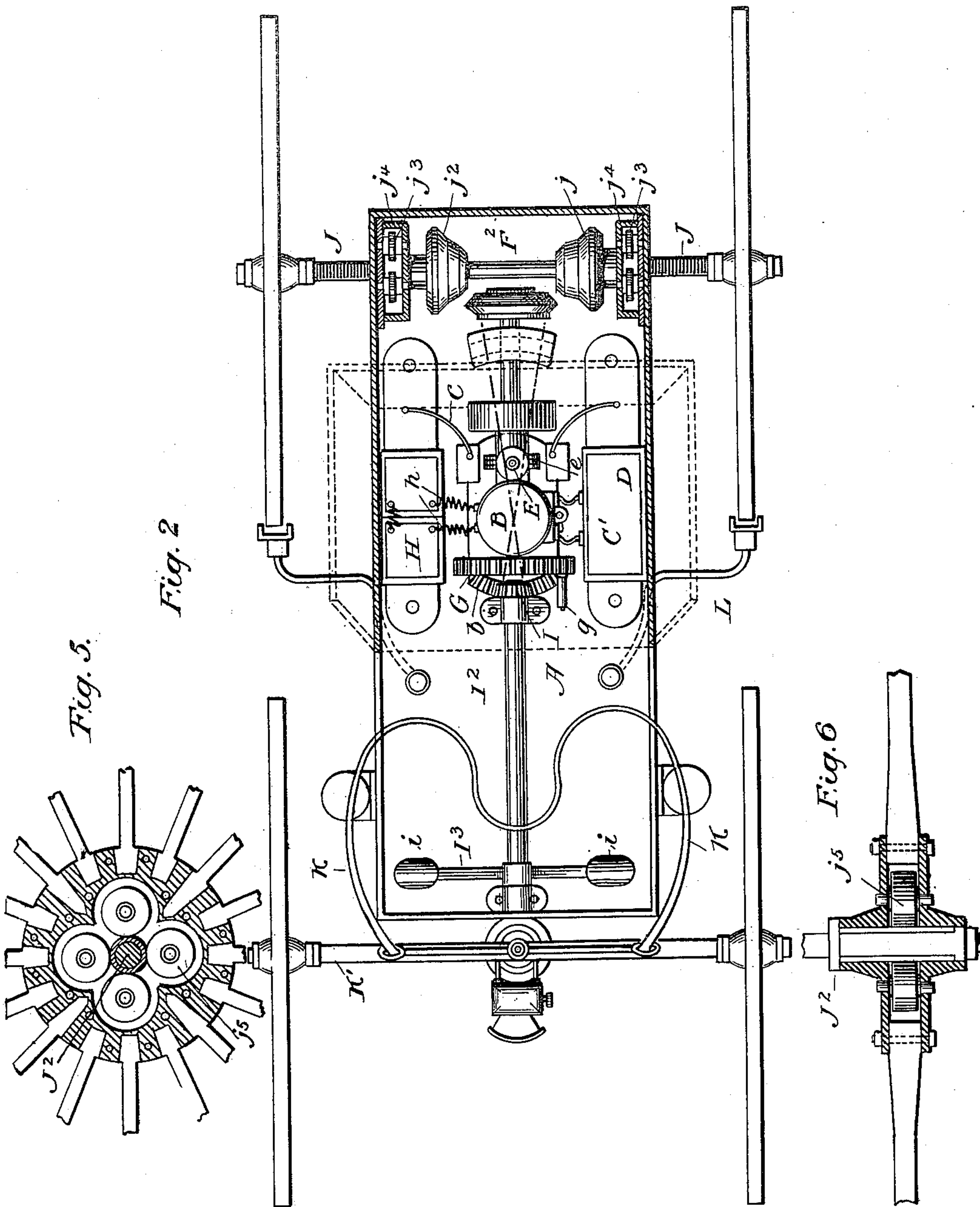
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(Application filed Jan. 9, 1899.)

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3 Sheets—Sheet 2.



Witnesses:  
A. M. E. Kennedy.  
Arthur Ashby

Inventor:  
R. H. Pless  
By H. R. Kamey  
Att.

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Fig. 4.

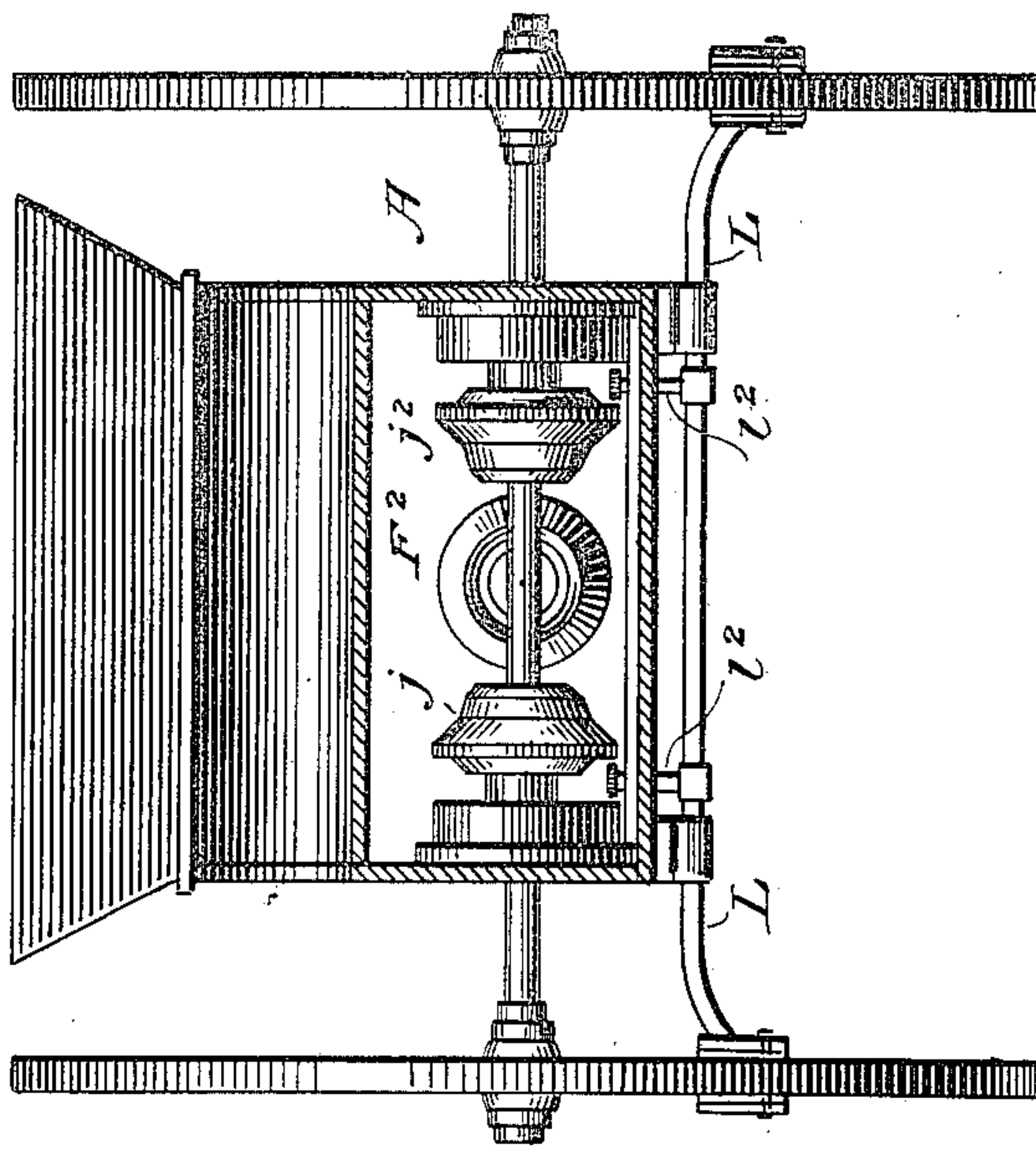
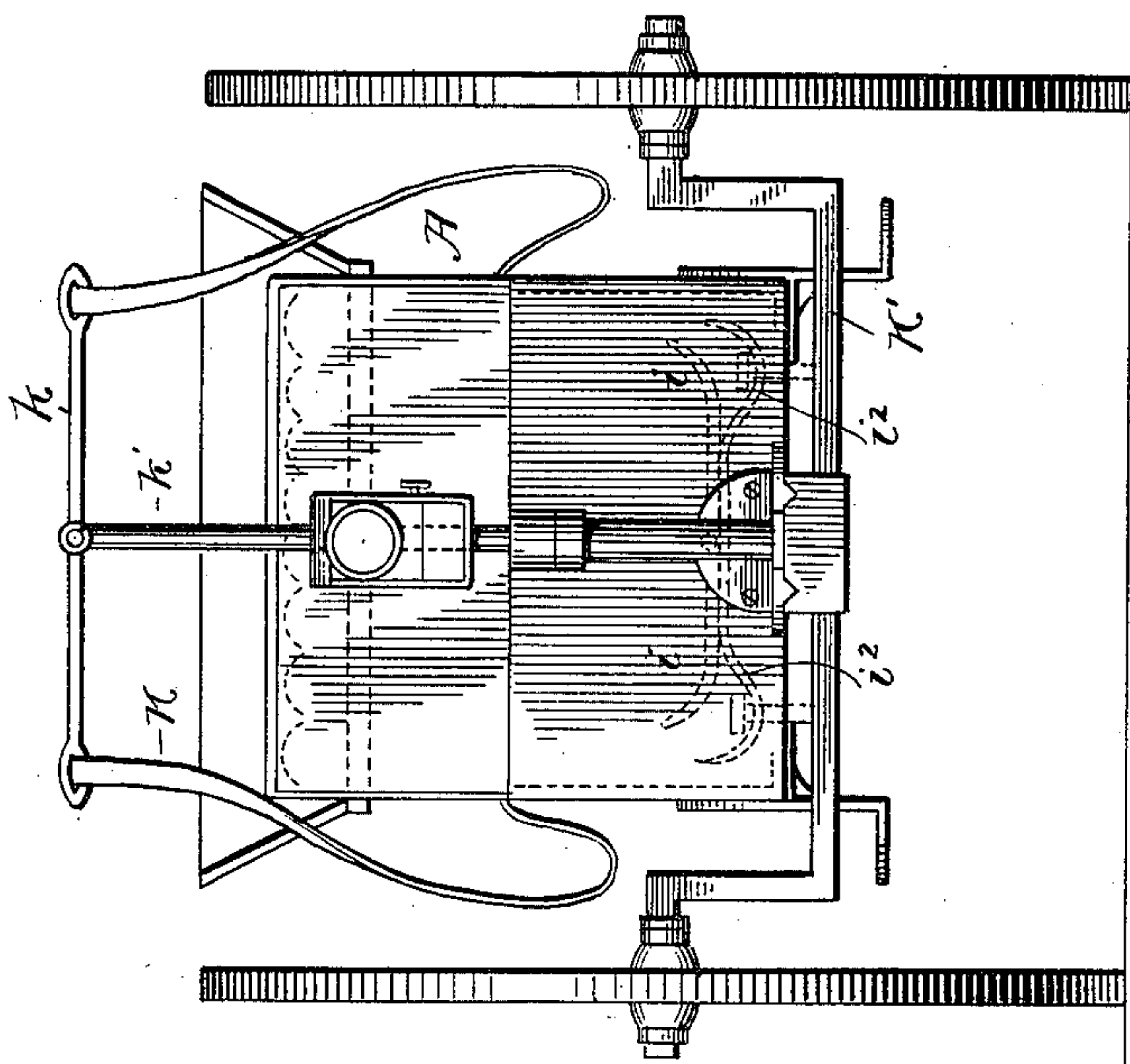


Fig. 3.



Witnesses:  
A. M. E. Kennedy.  
Arthur Ashley

Inventor:  
R. H. Plass  
By H. R. Kennedy  
Att.



# UNITED STATES PATENT OFFICE.

REUBEN H. PLASS, OF NEW YORK, N. Y., ASSIGNOR TO ISABELLA C. PLASS,  
OF SAME PLACE.

## SELF-PROPELLING VEHICLE.

SPECIFICATION forming part of Letters Patent No. 632,278, dated September 5, 1899.

Application filed January 9, 1899. Serial No. 701,642. (No model.)

*To all whom it may concern:*

Be it known that I, REUBEN H. PLASS, a citizen of the United States, residing at New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Self-Propelling Vehicles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to self-propelling vehicles.

The object of the invention is to produce a light-running vehicle provided with a powerful motor contained entirely beneath the seat of the vehicle and capable of easy manipulation to start, stop, increase, or diminish the speed.

Further, the object of the invention is to produce a self-propelling vehicle so constructed and having its parts so arranged as to be capable of use and manipulation by an unskilled person.

With these objects in view the invention consists, essentially, of a self-propelling vehicle comprising a source of power, such as a gasolene-engine, so mounted as to be capable of vibrating and having its shaft provided with a friction-head, and an axle provided with two friction-wheels, with which the head of the engine-shaft is brought into contact, the direction of movement and the speed of the vehicle being governed, respectively, by bringing the friction-head on the end of the engine-shaft into contact with one or the other of the wheels on the axle and by the amount of pressure of the friction-head on the shaft against the wheels on the axle.

The invention consists, further, in various novel details of construction whereby the objects of the invention are attained.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a self-propelling vehicle constructed in accordance with my invention, the side of the vehicle-body being removed. Fig. 2 is a plan view, the seat being removed in order to show the disposition of the working parts. Fig. 3 is a front elevation showing a portion of the operative

parts in dotted lines. Fig. 4 is a rear elevation, the rear end of the body being removed. Fig. 5 is a vertical sectional view of the hubs of the wheels employed, and Fig. 6 is a transverse sectional view of the hubs.

In the drawings, A represents the body of the vehicle, which in the present form I have shown as corresponding to that of a light road-wagon. Mounted beneath the seat *a* of the body is an engine B, which may be a gasolene, naphtha, or other similar engine. Arranged on each side of the engine are tanks C, containing gasolene, naphtha, or the like. On one side is a water-tank C', containing a supply of water for circulation around the cylinder of the engine to maintain the same at a uniform temperature. A pipe *c* leads from the tank C to a pump E, by which pump charges of hydrocarbon are injected into the engine B at proper intervals, the pump being operated by an eccentric *e* on the main shaft F of the engine. Arranged at the forward side of the engine is a gear-wheel G, provided with a handle *g*, which is connected to the shaft F through a pinion *g*<sup>2</sup>, so that by giving the wheel G a turn the engine will be started. The sparks necessary for exploding the charges in the engine are provided by an electric battery H, connected by wires *h* with the explosion-chamber of the engine.

The engine utilized is pivotally mounted in the body of the vehicle and has projecting from it a pin B<sup>2</sup>, suitably seated in the bottom of the vehicle, and the base of the engine is formed by a circular plate B<sup>3</sup>, having a projecting flange *b*. This flange *b* is provided in its upper face at the forward side with teeth, which teeth mesh with the teeth of a pinion I, which is mounted on a rock-shaft I<sup>2</sup>, mounted in suitable bearings in the floor of the vehicle. The rock-shaft I<sup>2</sup> is provided with a cross-piece I<sup>3</sup>, having at its upper ends foot-rests *i*, and beneath the ends of the cross-piece, at opposite sides, are leaf-springs *i*<sup>2</sup>, which bear against the bottom of the vehicle and tend to retain the cross-piece in a horizontal position.

At the rear end of the main shaft F of the engine is a friction-head F<sup>2</sup>, which is designed to transmit motion to corresponding friction-wheels *j*, *j*<sup>2</sup> on the rear axle J of the



vehicle. The friction-head  $F^2$  and the wheels attached to the axle are formed with faces of different sizes. Thus when the engine is in motion and is shifted by pressure on the foot-rests  $i$  in one direction or the other the friction-head  $F^2$  is brought into contact with one or the other of the friction-wheels  $j, j^2$ . As the engine is turned the larger portion of the friction-head  $F^2$  first comes in contact with the reduced portion of one of the wheels on the axle, and increased pressure on the foot-rest will result in bringing the enlarged portion of the friction-head into contact with the enlarged portion of the wheel. In this way the speed of movement of the vehicle may be regulated by the amount of pressure on the cross-piece.

It will be seen from the above description that the direction of movement of the vehicle depends upon the movement of the foot-rest and consequently upon which of the friction-wheels on the axle are engaged by the friction-head on the shaft.

The rear axle of the vehicle is mounted in antifriction-rollers  $j^3$ , mounted in boxes  $j^4$ , arranged one on each side of the body  $A$ , and the front wheels are provided in their hubs with antifriction-rollers  $j^5$ , which bear on the front axle  $J^2$ . In this way any friction in the bearings is avoided.

The direction of movement of the vehicle is regulated by a strap  $K$ , attached at opposite ends of the cross-bar  $k$ . The cross-bar  $k$  is rigidly attached to a vertical rod  $k'$ , which in turn is rigidly attached to the axle  $K'$  of the vehicle.

Brakes  $L$  are pivotally mounted in suitable hangers  $l$  beneath the floor of the vehicle and have foot-plates  $l^2$  arranged in convenient place to be pressed by the feet of the occupant of the seat.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a self-propelling vehicle, the combination with the ground-wheels and axle of the two drive-wheels fixed thereto a motor, a plate sustaining the motor and mounted to turn on an axis situated in a longitudinal line extending between the drive-wheels, a motor-shaft extending longitudinally in line with said axis, a head on the shaft situated between the drive-wheels, a rock-shaft extending forward longitudinally in line with the axis, with its rear end operatively connected

with the plate, and a device connected with the rock-shaft for operating it.

2. In a self-propelling vehicle, an engine capable of vibrating, a head on the shaft of the engine, wheels on an axle and designed to be engaged by the head on the shaft, a cross-piece mounted in a suitable position to be engaged by the feet of the occupant of the seat of the vehicle, and a connection between the engine and the cross-piece, substantially as described.

3. In a self-propelling vehicle, an engine pivotally mounted and provided with a plate having teeth, a rock-shaft provided with a cross-piece adapted to be pressed by the feet of the occupant of the seat, and with a pinion meshing with the teeth of the plate on the engine, and a connection between the engine and the shaft of the vehicle, substantially as described.

4. In a self-propelling vehicle an engine pivotally mounted and provided with a plate having teeth thereon, a rock-shaft having a pinion meshing with the teeth on the plate, a cross-piece attached to the rock-shaft and adapted to be pressed by the feet of the occupant of the vehicle, springs arranged beneath the ends of the cross-piece, and a connection between the engine and the axle of the vehicle, substantially as described.

5. In a self-propelling vehicle, an engine pivotally mounted, means for rotating the engine on its pivot, an engine-shaft provided at its end with a friction-head having faces of different diameters, substantially as described.

6. In a self-propelling vehicle, an engine and engine-shaft capable of vibrating, an axle provided with two wheels one arranged on each side of the shaft, means for changing the position of the engine to bring the shaft into gear with the respective wheels on the axle, in combination with a pivoted axle having a rod attached thereto, the rod being provided with a cross-head having means connected thereto for turning the same and thereby changing the position of the axle relative to the body of the vehicle, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

REUBEN H. PLASS.

Witnesses:

CHARLES L. FRAILEY,  
WILLIAM R. KENNEDY.